COMBINED HEAT & POWER
A NEW YORK STATE PERSPECTIVE

"ECONOMICS AND FINANCING"

PRESENTED BY
S. LYNN SUTCLIFFE
PRESIDENT

OVERVIEW

- AN BRIEF INTRODUCTION TO ONSITE SYCOM
- DISTRIBUTED ENERGY RESOURCES (DER) ECONOMICS: THE BIG PICTURE
- DER PROJECT ECONOMICS
- FINANCING DER PROJECTS

ONSITE SYCOM Energy Corporation

- LARGEST INDEPENDENT, NATIONALLY ACCREDITED ENERGY SERVICE COMPANY (ESCO)
- FULL SERVICE OFFERING WITH NATIONAL PRESENCE
- COMPANY ORIGINS IN COGENERATION AND ON-SITE POWER
- ACTIVE IN DISTRIBUTED GENERATION AND COMBINED HEAT AND POWER

ONSITE SYCOM Energy Corporation

- WE DEVELOP, DESIGN, INSTALL AND OPERATE ENERGY PROJECTS
  - OVER 1000 ENERGY EFFICIENCY PROJECTS
  - OVER 35 ON-SITE GENERATION PROJECTS
- PROJECTS RANGE FROM $100,000 TO $10 MILLION
- APPLICATIONS INCLUDE INDUSTRIAL, INSTITUTIONAL AND COMMERCIAL
- WE HAVE RESIDENTIAL AND LIGHTING SUBSIDIARIES

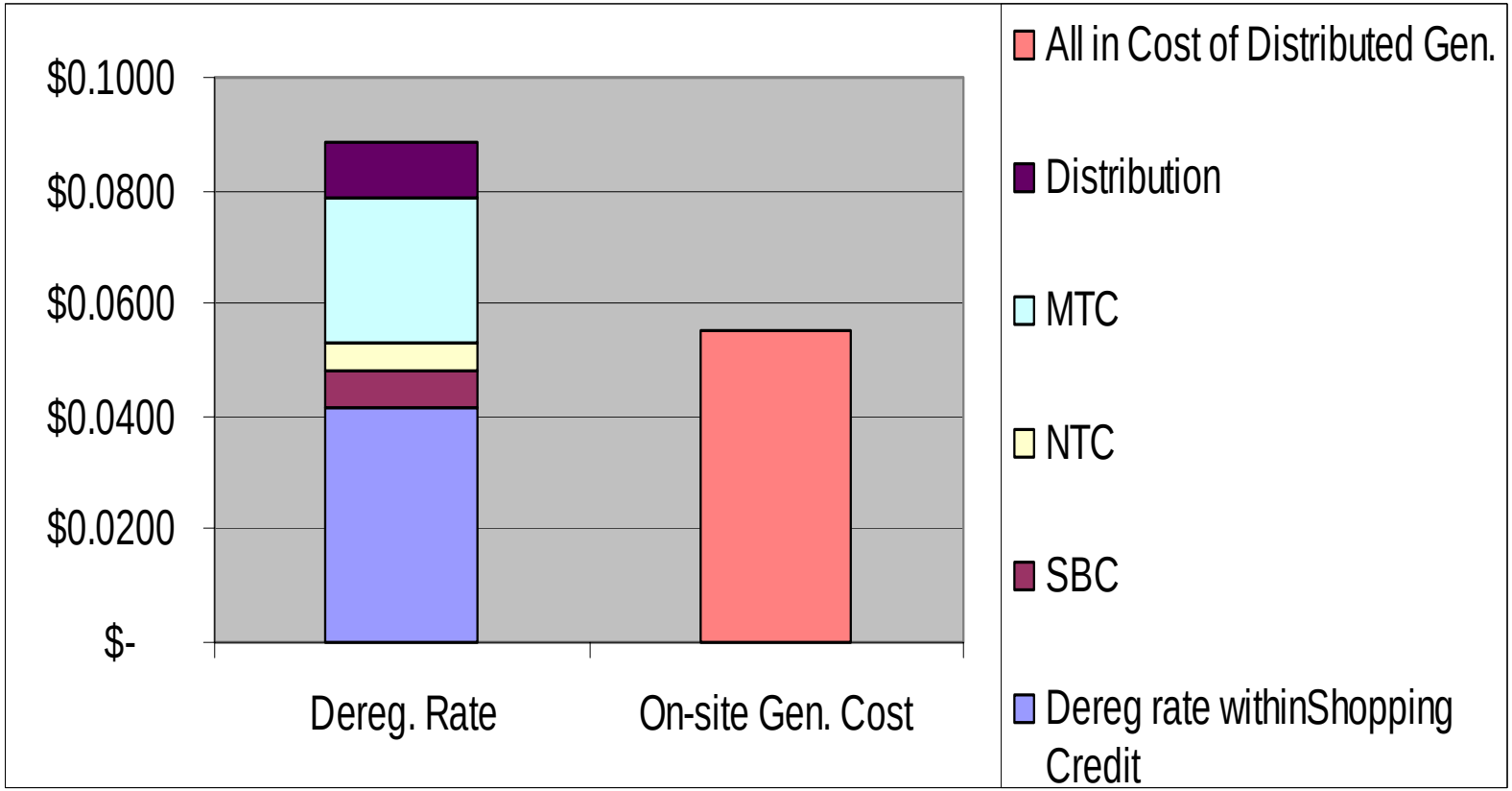
DISTRIBUTED RESOURCES ECONOMICS: THE BIG PICTURE

VALUE TO THE CUSTOMER

- PRICE
- RELIABILITY
- POWER QUALITY
- ENVIRONMENTAL BENEFITS
- PROTECTION AGAINST T&D RATE INCREASES

PRICE

COMPARISON BETWEEN CUSTOMER CHOICE RATE AND DISTRIBUTED GENERATION RATE 1999



RELIABILITY

Headlines Across the Nation

PJM Zone Hits $1,000 During Emergency

Megawatt Daily

West capacity may not meet demand.

Megawatt Daily

High Temperatures Prompt Stage One Electrical Emergency: Cal-ISO Urges Californians to Conserve.

"The Cal-ISO is asking customers to voluntarily reduce their use of electricity, to prevent more severe curtailment measures."

Experts Say New Jersey Power Outages Will Increase in Coming Years

Tom Johnson, The Star-Ledger

Nationwide Capacity Shortage by 2007?

Con Ed Blamed For Brownouts In Tri-State Area

"Con Ed and Mayor Giuliani are both urging New Yorkers, especially Brooklynites, to conserve electricity if at all possible."

By: News Radio 88 Staff

4,000 Great Lakes Energy Customers Without Power

We haven't seen the worst in blackouts, power experts say

The Star-Ledger

Load-driven East Goes Over $100

Megawatt Daily

Are Electricity Outages the Wave of the Future?

E Source

Electricity Daily

PUC numbers show possible power shortages for summer 2000

"Worst-case scenarios could leave Texans in the dark in the summer of 2000, according to the Public Utility Commission."

By JUAN B. ELIZONDO Jr. Associated Press Writer, Austin TX

U.S. MidAtlantic power grid sets hot weather alert.

"Peak Loads have reached record levels causing rolling blackouts, a voltage reduction and power cuts to interruptible corporate and industrial customers."

PJM Interconnection LLC,

GPU expects more blackouts on N.J. shore Thursday

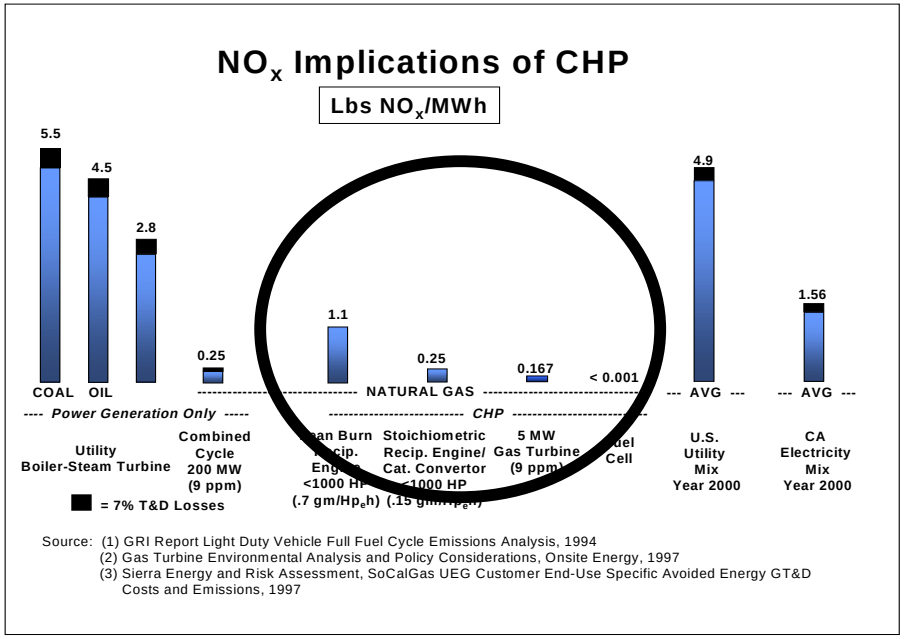
New York, July 8 (Reuters), GPU

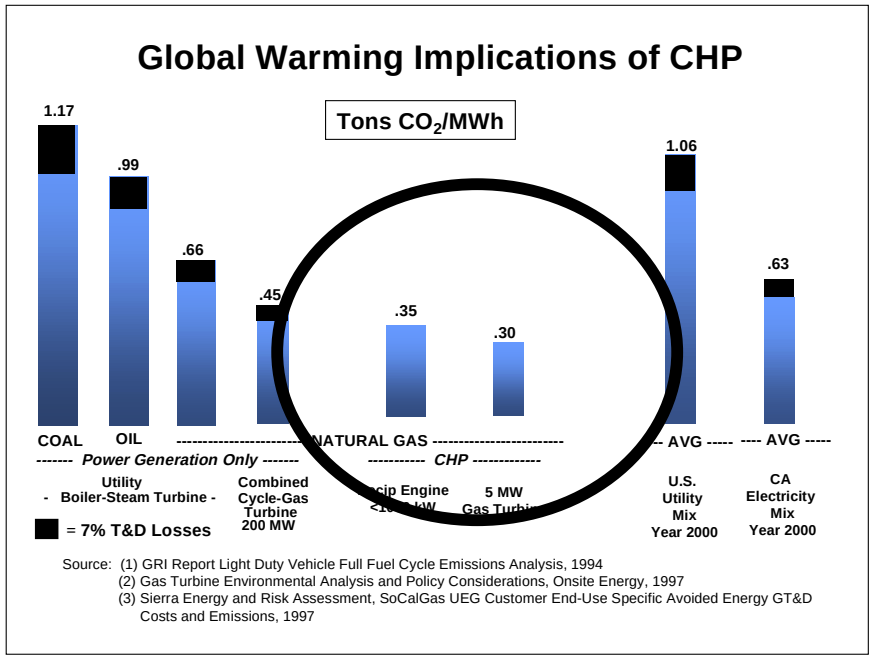
Expect Deadly Energy Shortages - They are here to stay

Allied Business Intelligence, Inc.

POWER QUALITY

ENVIRONMENTAL BENEFITS





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ONSITE SYCOM

PROTECTION AGAINST T&D RATE INCREASES

THE VALUE THE CUSTOMER CURRENTLY VALUES

- **THREE VALUES:**
  - **PRICE**
  - **PRICE, AND**
  - **PRICE**
  - **(AT LEAST FOR NOW)**

WHAT THE UTILITY CURRENTLY VALUES

- **THREE (NEGATIVE) VALUES**
  - **KWH REDUCTION**
  - **KWH REDUCTION**
  - **KWH REDUCTON**
  - **(AT LEAST FOR NOW)**

ECONOMICS: THE BIG PICTURE

- **UTILITIES**
  - KEEP PRICES UP TO REDUCE KWH REDUCTION
    - MAINTAIN OR CREATE ECONOMIC BARRIERS
      - EXIT FEES
      - STANDBY
      - BACK UP
      - INTERCONNECTION

- **DER STAKEHOLDERS**
  - REDUCE PRICES
    - ACHIEVE EFFICIENIES
      - TECHNOLOGY ADVANCES
      - CHP
    - CREATE INCENTIVES TO RECOGNIZE NON-PRICE VALUES
    - REMOVE BARRIERS

THE PUBLIC SERVICE COMMISSION CONTROLS THE ECONOMICS INITIALLY

ONSITE SYCOM

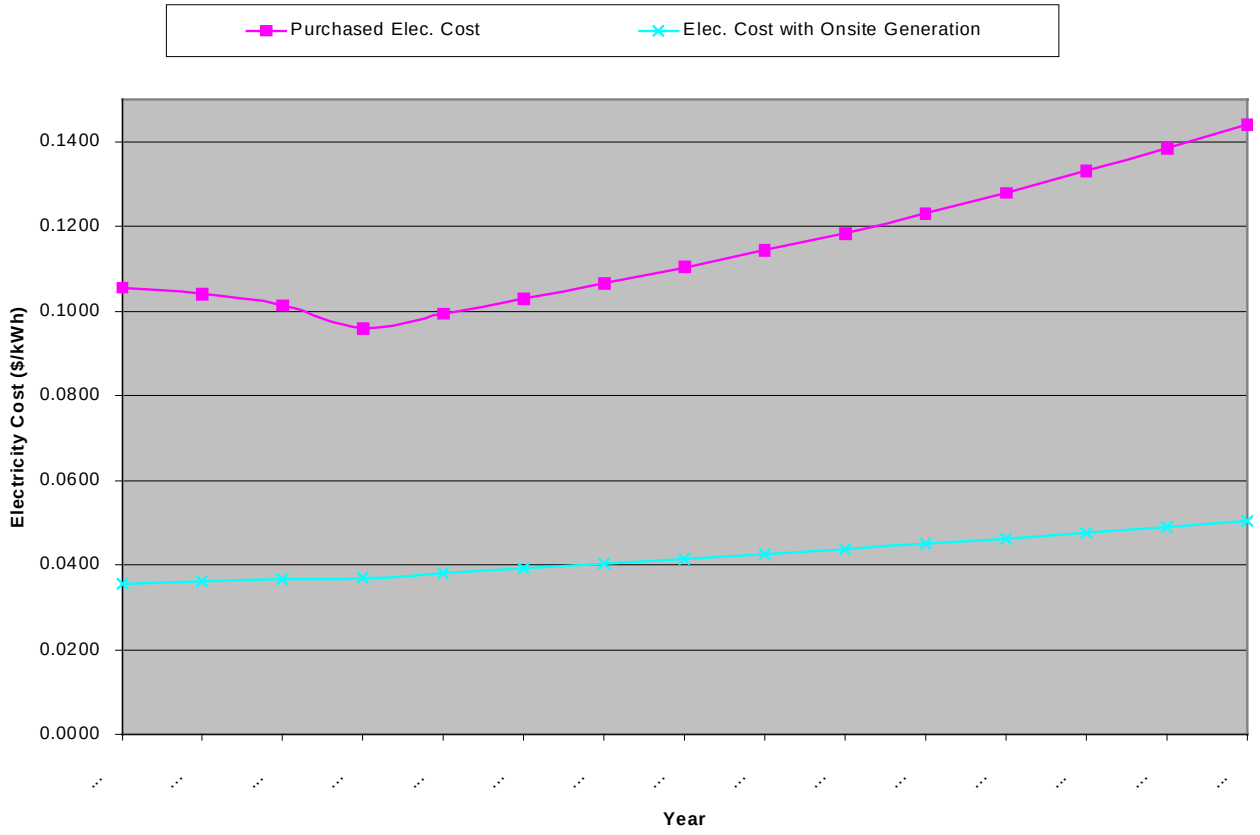
DER PROJECT ECONOMICS

OVERVIEW OF PROJECT ECONOMICS

- PROJECT THE COST OF ENERGY WITHOUT DER
- PROJECT THE COST OF ENERGY WITH DER
- IF THE COST OF ENERGY WITH DER IS MATERIALLY LESS EXPENSIVE, THEN THE DER PROJECT IS ECONOMIC IN THE EYES OF THE CUSTOMER

ONSITE SYCOM

A CHP PROJECT EXAMPLE



Delivered								
Steam Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hot Water Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Energy Costs		2122.90	2093.33	2039.80	1930.01	1998.61	2069.64	2143.19
REVENUE/SAVINGS								
Electricity	Total	1905.26	1878.71	1830.68	1732.14	1793.71	1857.46	1923.47
Delivered								
Steam Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Hot Water Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Cooling Produced		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Electric Sales		889.88	916.58	944.08	972.40	1001.57	1031.62	1062.56
Demand Reduction		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Gross Savings/Revenue		2795.14	2795.29	2774.76	2704.54	2795.27	2889.07	2986.04
EXPENSES								
Cogen Fuel		1178.93	1214.29	1250.72	1288.24	1326.89	1366.70	1407.70
Standby Charge		159.77	159.61	156.10	144.70	150.49	156.51	162.77
Maintenance		151.20	154.22	157.31	160.45	163.66	166.94	170.28
Insurance		24.00	24.48	24.97	25.47	25.98	26.50	27.03
Operation/Administration		60.00	61.20	62.42	63.67	64.95	66.24	67.57
		=====	=====	=====	=====	=====	=====	=====
Total Expenses		1573.89	1613.81	1651.52	1682.54	1731.97	1782.89	1835.34
CASH (w/o debt serv)		1221.25	1181.49	1123.23	1022.00	1063.30	1106.18	1150.69
Existing Elec. Cost ($/kWh)		0.1057	0.1042	0.1016	0.0961	0.0995	0.1030	0.1067
Debt Service		520	520	520	520	520	520	520
Elec. Cost w/ OSG ($/kWh)		0.0356	0.0363	0.0368	0.0370	0.0380	0.0391	0.0402
w/o debt, sales credit, generated kWh only								
Total Energy Savings (%)		57.5	56.4	55.1	53.0	53.2	53.4	53.7
w/o debt								
Elec. Cost w/ OSG ($/kWh)		0.0449	0.0454	0.0456	0.0452	0.0466	0.0480	0.0494
w/o debt, sales credit, TOTAL kWh								

Year	Existing Gross Annual Energy Cost	Savings and Revenue from Onsite Generation	Total Fuel and O&M Cost for Onsite Generation	Gross Annual Savings and Revenue	Percentage Annual Reduction in Energy Costs	Estimated Annual Lease Payment	Future Annual Energy Costs	Net Annual Savings
1	$2,122,902	$2,795,140	$1,573,895	$1,221,245	**57.53%**	($519,722)	$1,421,378	**$701,523**
2	$2,093,325	$2,795,292	$1,613,807	$1,181,485	**56.44%**	($519,722)	$1,431,562	**$661,764**
3	$2,039,804	$2,774,755	$1,651,522	$1,123,233	**55.07%**	($519,722)	$1,436,293	**$603,511**
4	$1,930,012	$2,704,541	$1,682,543	$1,021,999	**52.95%**	($519,722)	$1,427,735	**$502,277**
5	$1,998,606	$2,795,275	$1,731,970	$1,063,305	**53.20%**	($519,722)	$1,455,023	**$543,583**
6	$2,069,638	$2,889,071	$1,782,888	$1,106,183	**53.45%**	($519,722)	$1,483,176	**$586,461**
7	$2,143,194	$2,986,035	$1,835,343	$1,150,692	**53.69%**	($519,722)	$1,512,224	**$630,970**
8	$2,219,365	$3,086,273	$1,889,382	$1,196,891	**53.93%**	($519,722)	$1,542,195	**$677,169**
9	$2,298,242	$3,189,898	$1,945,055	$1,244,843	**54.16%**	($519,722)	$1,573,121	**$725,121**
10	$2,379,923	$3,297,023	$2,002,411	$1,294,611	**54.40%**	($519,722)	$1,605,034	**$774,890**
11	$2,475,120	$3,417,293	$2,061,504	$1,355,789	**54.78%**	($519,722)	$1,639,053	**$836,067**
12	$2,574,125	$3,542,025	$2,122,386	$1,419,639	**55.15%**	($519,722)	$1,674,208	**$899,918**
13	$2,677,090	$3,671,388	$2,185,114	$1,486,275	**55.52%**	($519,722)	$1,710,537	**$966,553**
14	$2,784,174	$3,805,556	$2,249,744	$1,555,813	**55.88%**	($519,722)	$1,748,083	**$1,036,091**
15	$2,895,541	$3,944,710	$2,316,335	$1,628,375	**56.24%**	($519,722)	$1,786,887	**$1,108,653**
Totals	**34,701,063**	**47,694,276**	**28,643,899**	**19,050,377**	**54.83%**	**(7,795,824)**	**23,446,510**	**11,254,553**

WHY DOES THIS PROJECT WORK?

- NO EXIT FEES
- REASONABLE STANDBY CHARGES
- GOOD TECHNOLOGY
  - LOW POLLUTING
  - GOOD HEAT RATE
- GOOD LOAD PROFILE
- REASONABLE INTERCONNECTION APPROACH
- THIS SAME PROJECT WOULD PROBABLY NOT BE ECONOMIC IN NEW YORK AT THE PRESENT TIME

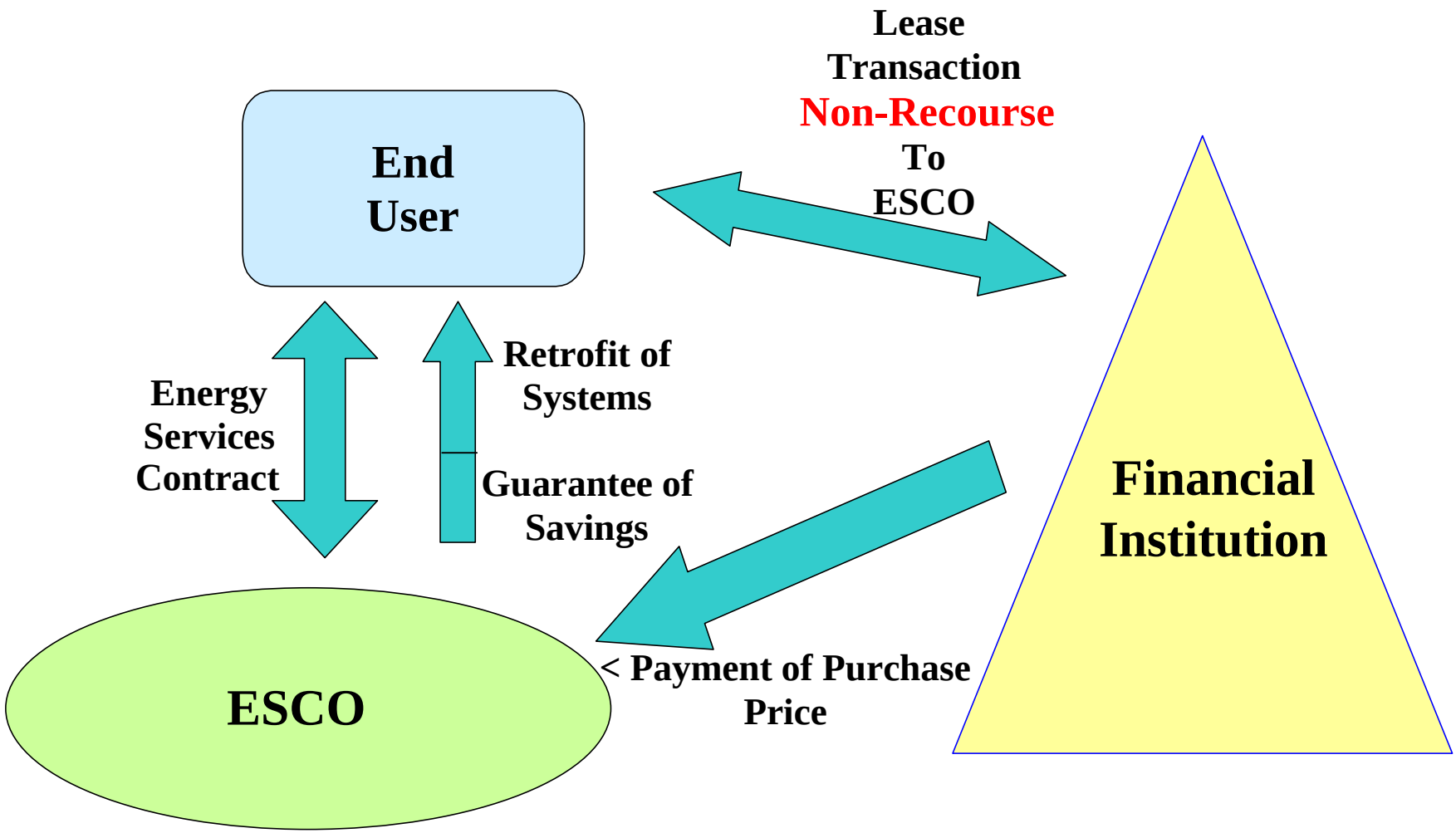
ONSITE SYCOM

FINANCING

OVERVIEW OF FINANCING

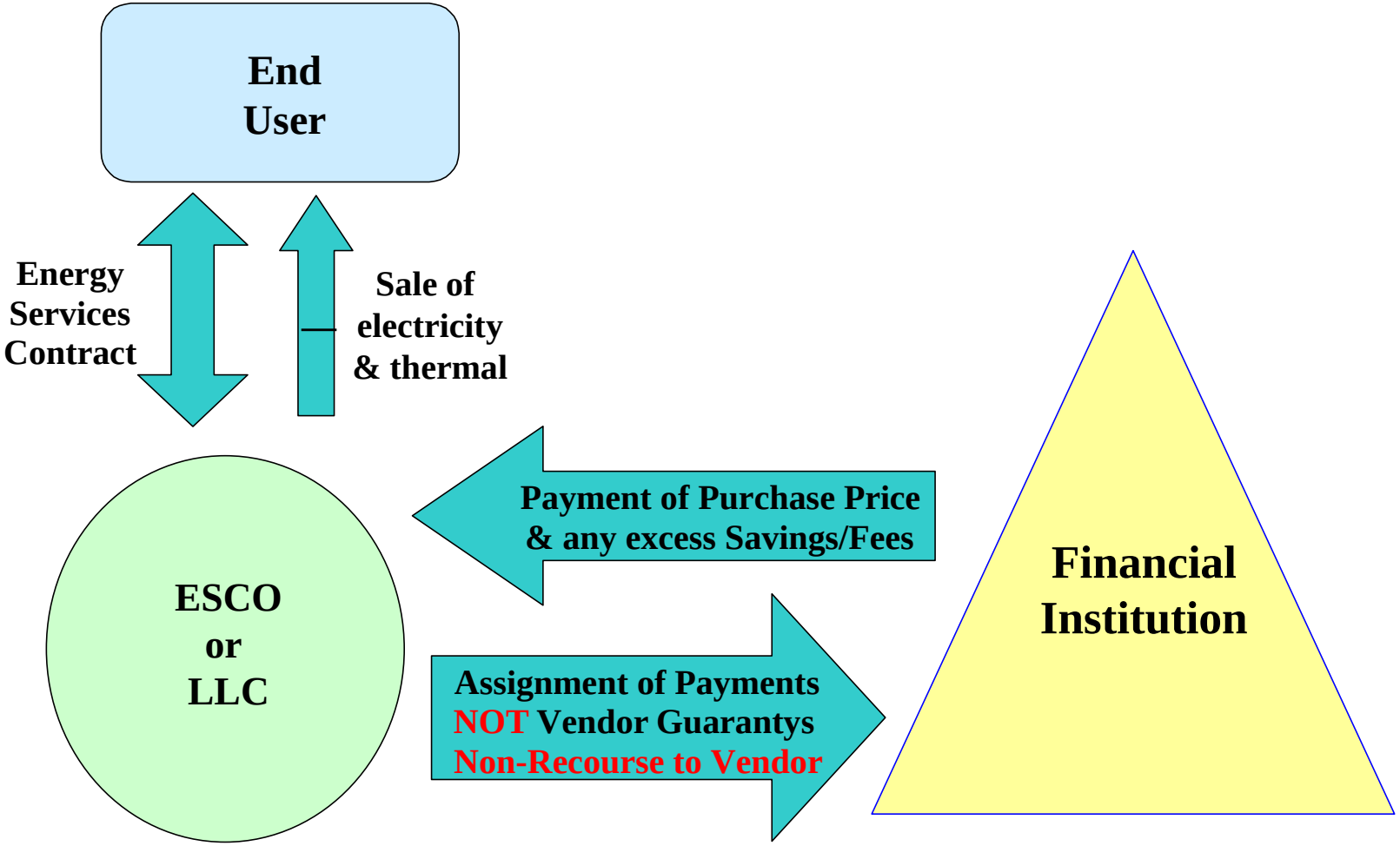
- PRODUCE A FINANCING APPROACH THAT WILL PRODUCE A POSITIVE NET BENEFIT TO THE CUSTOMER IN EACH YEAR OF OPERATION
  - RATE OF FINANCING
  - TERM
- MANAGE THE RISK TO THE CUSTOMER

Leases



The above represents the simple nature of the Standard Lease structure. Lease may be Finance, True or Operating type.

Energy Services & Performance Contracts



The above represents the simple nature of the Standard ESA structure.

CONCLUSION

- ECONOMICS CAN FAVOR DER IN CERTAIN SITUATIONS IF THE MARKET IS NOT SKEWED AGAINST DER BY REGULATORY ACTION OR INACTION
- BECAUSE OF FINANCING, CUSTOMERS WILL ACCEPT THESE PROJECTS EVEN IF THE SIMPLE PAYBACK PERIOD IS IN EXCESS OF TWO YEARS
- UTILITIES DO NOT FAVOR KWH REDUCTION (UNLESS SOMEONE COMPENSATES FOR LOST REVENUE)
- MANY OF THE ISSUES IN THIS CONFERENCE REALLY REVOLVE AROUND THIS ECONOMIC TENSION BETWEEN KWH REDUCTION MEASURES THAT ARE COST-EFFECTIVE FOR THE CONSUMER AND POTENTIALLY PROFIT-REDUCING FOR UTILITIES
- THE OBJECTIVE SHOULD NOT BE TO TO CREATE AN UNFAIR ADVANTAGE FOR ANY PARTICULAR STAKEHOLDER.
- THE OBJECTIVE SHOULD BE TO RESOLVE THIS TENSION FOR THE BENEFIT OF THE CONSUMER AND SOCIETY
- DECOUPLING THE VOLUME OF SALES FROM RATES (PERHAPS WITH SOME INCENTIVE TO THE UTILITY) WILL GO A LONG WAY TO RESOLVING THE TENSION AND ACCOMPLISHING THE OBJECTIVE

ONSITE SYCOM